RECENT EFFORTS FOR THE RESCUE OF OCEANOGRAPHIC DATA AND THE DEVELOPMENT OF AN OCEANOGRAPHIC DATA ARCHIVE FOR THE EASTERN MEDITERRANEAN SEA

by

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ABSTRACT

The Eastern Mediterranean Sea has been the subject of an intensive oceanographic research activity, during the last fifteen years. This is due to the implementation of large scale research projects (e.g., POEM, Mediterranean Targeted Project, etc.), designed in the framework of International Organizations (IOC, EU, etc.), to the improvement and increased availability of marine research means (e.g., vessels, equipment, etc.), in several countries of the region, and finally to the increased amount of financial resources made available, for marine research, by various national and international agencies, and in particular by the Marine Science and Technology Programme of the European Union (EU/MAST). These research activities provided comprehensive data sets and enhanced our understanding on processes and phenomena in the region. At the same time they revealed the need for the existence of an archive of historical observational data. The interpretation and systematic study of such data, among the others, play a decisive role for the proper planning and design of marine research projects (in particular of oceanographic cruises) and in addition facilitate the synthesis of the results of recent studies. This view is fully supported, by the experience gained from the study of the important climatological changes, occurring during the recent years, in the water masses of this particular region.

Several efforts have been made within the recent years for the development of an archive of historical data sets and also for invetorizing the climatological fields of the Mediterranean Sea (Miller et al., 1970; Guibout, 1987; Picco, 1990, Levitus, 1982; Brasseur et al., 1996a, 1996b). More recently the MEDATLAS Project provided an updated, quality controlled data set of temperature and salinity profiles of the Mediterranean Sea and produced a revised climatological statistics for the region (MEDATLAS Consortium, 1997). This initiative is currently supplemented by the MEDAR/MEDATLAS Project and extended to other data types (chemical data, biological data). Within the framework of the last two Projects an effort was made (and it is still under way) by the Hellenic

National Oceanographic Data Centre (HNODC) for the rescue of oceanographic data and the development of an oceanographic data archive of the Eastern Mediterranean region (defined as the sea area to the east of the Sicily Strait). At present, the total amount of hydrological data gathered consists of 32,000 temperature and salinity profiles of which 11,000 are CTD data and 21,000 water bottle data, collected during 892 cruises. Of them, around 2,500 bottle data and 7.500 CTD profiles were made available to the HNODC by Hellenic marine research laboratories and in particular by the Institute of Ocenography of the National Centre for Marine Research, in Athens. Historical data sets were obtained by various large data sources, such as ICES, WDC-A, MODB, etc. In addition to the above, a total of 40,000 MBT and 42,000 XBT profiles have been obtained. These were collected by the hydrographic Service of France, from the navies of various countries, and made available to the MEDATLAS Project. Concerning chemical data, a total of 170 cruises have been obtained, up to now. These were made available to the HNODC by various Hellenic laboratories, from their participation in national and international projects. During the above cruises oxygen measurements were made at 2,914 stations, nitrates at 860 stations, phosphates at 1,236 stations and silicates at 918 stations. The majority of these data, originally being in hard copy (paper) have now been digitized. For both, the hydrological and chemical data, inventories have been developed. Furthermore, all the data sets have been transcoded to the MEDATLAS Format (MAILLARD et al., 1995; MEDATLAS Group, 1996). In addition, the hydrological data sets have been subjected to quality control using a computer programme (SCOOP) for UNIX, developed by IFREMER/SISMER (Cure et al., 1995). To manage the various data sets, an oceanographic data base has been developed at the HNODC. The ORACLE RDBMS, related development tools (DEVELOPER-2000, pro-C, etc.) and third-generation programming languages (C, FORTRAN) have been used for the data base development. A programming interface, permitting access through www, which is now under development will provide the scientific community with a fast, reliable and efficient way for accessing the data base.

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